

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Rec'd PCT/PTO 02 SEP 2004

Applicant's or agent's file reference J 3651 (C)/sje	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/01581	International filing date (day/month/year) 18.02.2003	Priority date (day/month/year) 12.03.2002
International Patent Classification (IPC) or both national classification and IPC A61K7/06		
Applicant UNILEVER N.V. et al		



1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 13.08.2003	Date of completion of this report 25.05.2004
Name and mailing address of the International preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Menidjel, R Telephone No. +31 70 340-3680 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP 03/01581

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

Description, Pages

1-45 as originally filed

Claims, Numbers

1-16 received on 23.12.2003 with letter of 23.12.2003

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-16
	No: Claims	
Inventive step (IS)	Yes: Claims	1-16
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

see separate sheet

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Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 - The following documents (D1,D2) are referred to in this communication (Article 33(6) PCT); the numbering will be adhered to in the rest of the procedure:

D1: WO 95 01384 A (PROCTER & GAMBLE) 12 January 1995 (1995-01-12)

D2: US-A-5 271 930 (ANDREWS ANN M ET AL) 21 December 1993 (1993-12-21)

- The amendments filed by the applicant do not introduce subject-matter which extends beyond the content of the application as filed (Article 34(2)(b) PCT).

2. Novelty (Article 33(2) PCT)

- The subject-matter of present claims 1-16 is new for the following reasons (Article 33(2) PCT):

- Document D1 describes a hair treatment composition comprising a polymer comprising an ABA copolymer, wherein the A group are polymeric blocks built up from an ethylenically unsaturated polymerisable monomer such as polyacrylate blocks or polymethacrylate blocks, the B group is a poly(alkylene glycol) block, and a cosmetically acceptable diluent or carrier (Cf. D1, page 3, line 17-page 6, line 10; page 11, line 17-page 16, line 6; claims 1-18). The copolymers described in document D1 refers to grafted polymers (Cf. D1, page 7, lines 16-25).

The difference between the subject-matter of present claim 1 and the teaching of document D1 is that D1 does not disclose an ABA block copolymer and does not disclose a B group which is a poly(ethylene glycol).

- Documents D2 and D3 separately refer to a hair treatment composition comprising a polymer comprising an ABA triblock copolymer, wherein the A group are polymeric blocks built up from an ethylenically unsaturated polymerisable monomer, the B group is a poly(alkylene glycol) block, and a cosmetically acceptable diluent or carrier (Cf. D2, column 3, line 22-column 4, line 39; examples 1-17; claims 1-14; Cf. D3, column 3, line 35-column 4, line 35 column 5, line 26-column 6, line 23).

The difference between the subject-matter of present claim 1 and the teaching of documents D2 and D3 is that D2 and D3 do not disclose an ABA block copolymer wherein the A group are polyacrylate blocks or polymethacrylate blocks.

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3. Inventive Step (Article 33(1),(3) PCT)

a - The subject-matter of present claims 1-16 is considered inventive for the following reasons (Article 33(1),(3) PCT):

- The subjective problem to be solved by the present application is to provide a polymer for hair styling composition which can perform well under conditions of high humidity (see application as filed, on page 1, lines 20-25).

- The solution accorded to the present claim 1 consists in a hair treatment composition comprising:

i) a polymer comprising an ABA block copolymer, wherein the A group are polyacrylate blocks or polymethacrylate blocks and the B group is a poly(ethylene glycol).

ii) a cosmetically acceptable diluent or carrier.

- Document D1, which is considered as the closest prior art, describes a hair treatment composition comprising a polymer comprising an ABA copolymer, wherein the A group are polymeric blocks built up from an ethylenically unsaturated polymerisable monomer such as polyacrylate blocks or polymethacrylate blocks, the B group is a poly(alkylene glycol) block, and a cosmetically acceptable diluent or carrier (Cf. D1, page 3, line 17-page 6, line 10; page 11, line 17-page 16, line 6; claims 1-18). The copolymers described in document D1 refers to grafted polymers (Cf. D1, page 7, lines 16-25).

- The claimed subject-matter differs from the teaching of the closest prior art D1 in that the polymer claimed is an ABA block copolymer and the B group is a poly(ethylene glycol).

- The technical effect of this difference is that the ABA block copolymers where the mid-block (B) is a poly(alkylene glycol) show a good solubility in water/alcohol solvent systems but also perform very well under high humidity conditions (see application as filed, on page 5, lines 23-29).

Neither D1,D2 nor their combination renders the subject-matter of present claims 1-16 obvious. Therefore, the subject-matter of present claims 1-16 involves an inventive step (Article 33(1),(3) PCT).

5. Industrial Application (Article 33(4) PCT)

- The subject-matter of present claims 1-16 is considered to be industrially applicable;

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claims 1-16 therefore, satisfy the criterion set forth in Article 33(4) PCT.